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# Controlling Pests with Rotenone

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**rotenone registered  
in US since 1947**

All pesticides, before they are sold or distributed in the United States, must be registered by EPA. This registration—or licensing—decision is based on the Agency’s thorough review of available and required scientific studies and our conclusion that they will not pose unreasonable risks to people or the environment when used according to label directions and precautions. Because of advances in scientific knowledge, the law requires that EPA re-assess older pesticides to ensure that they meet today’s more stringent standards, and, if necessary, require new restrictions.

**rotenone is a  
botanical pesticide**

Pesticides include certain botanicals, such as rotenone, which is derived from roots of certain tropical plants. Though botanicals are derived from plants, they may still be toxic. Under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), the Federal government has registered rotenone since 1947. This fact sheet provides general information on the pesticide rotenone, its uses, and current regulatory status.

**rotenone is used to  
control insects,  
mites, ticks, spiders  
and fish**

## What is rotenone?

Rotenone is a naturally occurring compound that is present in a number of plants. For example, this botanical pesticide may be derived from the roots of *Derris* spp., *Lonchocarpus* spp., and *Tephrosia* spp., found primarily in Malaya, South America and East Africa, respectively. It is formulated in pesticide products to control insects, mites, ticks, spiders, and undesirable fish.

**rotenone commonly  
used in homes**

Rotenone may be used in a variety of settings: on commercial food crops; on household and ornamental gardens; in agricultural buildings; on dogs, cats, or rabbits; on horses; on stored grain; outdoors and in greenhouses; and in lakes and streams to control undesirable fish species. According to a 1990 home and garden pesticide use survey, rotenone was one of the pesticides most commonly used in and around the home.

**1988 scientific  
review supported  
continued rotenone  
use**

## What are the risks of using rotenone?

EPA last conducted a comprehensive review of rotenone in 1988. At that time, the Agency determined, based on available scientific studies, that rotenone did not pose unreasonable risks to humans or the environment when used according

**updated review  
underway**

to label directions. To ensure that pesticides continue to meet current scientific understanding and safety standards, the Agency is reassessing older pesticides under the reregistration program.

**rotenone products  
for home use are  
low risk**

As part of this reregistration program, EPA is compiling, and will soon review, a full complement of current scientific studies examining the potential human health and environmental effects of rotenone use. Although studies have indicated that exposure to high concentrations of rotenone may cause adverse reactions, formulations used in and around the home typically contain much lower concentrations of the active ingredient, and are not likely to cause adverse reactions if used according to the label.

**new study on  
rotenone**

A laboratory study (Betarbet et. al., "Chronic Systemic Pesticide Exposure Reproduces Features of Parkinson's Disease," Nature Neuroscience, December 2000, V. 3 N. 12, p. 1227) suggests a possible link between high levels of exposure to Rotenone and some forms of Parkinson's Disease in animals. EPA has reviewed this study and is determining the appropriate course of action. The results of this review will help determine what next steps the Agency will take toward completion of the rotenone review, currently scheduled for 2003 or 2004.

**potential risks to  
non-target fish**

Rotenone is extremely toxic to fish. Persons using rotenone products to control insects and other pests must be careful to avoid contaminating water when disposing of equipment washwaters. Proper use of rotenone poses low risks to wildlife.

**Recent regulatory history of rotenone**

**making rotenone  
safer and more  
effective**

As indicated above, rotenone has been a registered pesticide in the U.S. under FIFRA for 53 years. Since 1988, when EPA completed its first reassessment, the Agency has taken a number of actions to make rotenone products more effective and safer for humans and the environment, including the following:

- Removing products from the market where registrants lacked adequate labeling, data, or interest in continuing registration;
- Restricting the most environmentally hazardous uses to application by certified applicators (e.g. lakes and ponds);
- Canceling selected uses (e.g., cranberries, canceled because the company decided not to support the use with additional data);
- Eliminating those formulations more toxic to pets;
- Upgrading precautionary labeling for remaining pet product;
- Requiring registrants to submit residue data for permitted uses on food crops;
- Revising labels of all remaining products, such as ingredient statements, precautions, and use, storage, and disposal instructions.

**reregistration  
tentatively  
scheduled for 2003  
or 2004**

EPA is currently reviewing older pesticides to ensure that they meet evolving human health and environmental safety standards. Therefore, the Agency will again review all available data and determine if any additional studies are needed to support future registration of rotenone products. Re-registration will also allow EPA to determine if the Agency should take protective measures to ensure that continued use of rotenone products does not pose unreasonable risks to public health or the environment.

### **For More Information**

Please visit the EPA Office of Pesticide Programs' home page, **[www.epa.gov/pesticides](http://www.epa.gov/pesticides)** for further information on EPA's pesticide regulatory program. The web site also features periodic updates on EPA's activities, recent actions, and pesticide related news.

EPA also provides a variety of materials available in paper copy. For a list of our available publications, and for more information about our programs, please call (703)305-5017.

Information (general and technical) on pesticides and their toxicity is available from the National Pesticide Information Center (NPIC) at 1-800-858-7378 or on the Internet: **<http://npic.orst.edu/>**.

Office of Prevention, Pesticides  
and Toxic Substances (7506C)  
735-F-02-016  
[www.epa.gov](http://www.epa.gov)  
August 2002